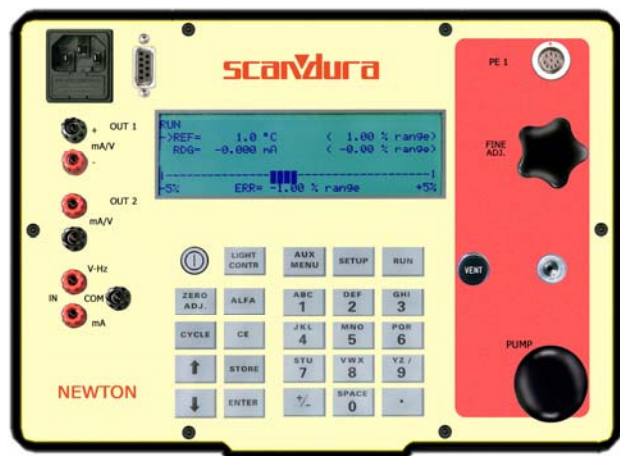


S1C507E1-NEW



NEWTON : the Portable
Pressure Calibrator
for the field testing of the
Electronic & Pneumatic Process
Instruments

Portable Calibrator for
pressure & electrical signals

The Calibration of:

- Transmitters
- Pressure Switches
- Recorders
- Controllers
- Manometers
- Indicators
- Positioners
- Converters

Newton is the new Scandura solution for the calibration of pressure and electric devices: transmitters, pressure switches, recorders, controller, manometers, indicators, positioner and converters.

The main features are:

- pressure ranges from -900 mbar up to 700 bar.
- vacuum and pressure generation up to 21 bar
- two channels for the electrical signals
- frequency measurement
- 24 V d.c. to feed the transmitter
- interface to PC through RS-232
- 3 readout visualization
- error calculation
- data storage
- selectable engineering units
- logging function

■ TECHNICAL SPECIFICATION

- ▶ Digital measurement & simulation of:
 - Pressure/vacuum generation from - 0.9 bar up to 21 bar with built in pump and fine adjustment and up to 700 bar with external transducers and external pump
 - Voltage (two channels)
 - Current (two channels)
 - Frequency (measurement only)

- ▶ Generation of: 24 V d.c. to feed the transmitter
- ▶ Switch status test: detection of ON/OFF status
- ▶ Membrane Alphanumeric Industrial keyboard
- ▶ Large, back lighted Alphanumeric and Graphic LCD display for simultaneous presentation of three types of information on three lines
- ▶ RS-232 Serial Port for Printer or PC connection
- ▶ On board memory to storage up to 1200 points of calibration
- ▶ Compact, lightweight shock resistant case IP 65
- ▶ Interchangeable and self-configured external transducers
- ▶ standard connection for any Scandura external pressure transducer
- ▶ Built-in battery charger 220/240 V – 50 Hz (option 110/120 V), 10 VA
- ▶ Built-in battery-pack, for 8 hours continuous operations
- ▶ Operating ambient temperature 0 ÷ 50°C
- ▶ Operating ambient humidity 10 % ÷ 90 % non condensing
- ▶ Dimensions 290 x 180 x 180 mm (packed 530 x 360 x 360 mm)
- ▶ Weight 6 kg net (packed 9 kg)

Pressure and Electrical simulation and measurement:

- ▶ **NEWTON** features: one internal transducer (for range selection see table 1) and connection for the external ones (for external transducer ranges see table 2)

Table1 PRESSURE RANGES			
INTERNAL TRANSDUCERS # (Pressure Port Connection: 1/8" BSP F)			
Code	Range	Resolution	Uncertainty *
STANDARD RANGES FOR NEWTON			
801G	-1 ÷ 7 bar	1 mbar	0.04 % (f.s.)
222G	-1 ÷ 21 bar	1 mbar	0.04 % (f.s.)
OPTION – LOW PRESSURE -			
060G	-60 ÷ 60 mbar	0.01 mbar	0.15 % (f.s.)
500G	-500 ÷ 500 mbar	0.1 mbar	0.04 % (f.s.)
151G	-900 ÷ 1500 mbar	0.1 mbar	0.04 % (f.s.)
OPTION –ABSOLUTE PRESSURE -			
151A	0 ÷ 1500 mbar abs.	0.1 mbar	0.04 % (f.s.)
251A	0 ÷ 2500 mbar abs.	0.1 mbar	0.04 % (f.s.)
501A	0 ÷ 5 bar abs.	1 mbar	0.04 % (f.s.)
701A	0 ÷ 7 bar abs.	1 mbar	0.04 % (f.s.)
212A	0 ÷ 21 bar abs.	1 mbar	0.04 % (f.s.)

Table 2 EXTERNAL TRANSDUCERS # (Process Connection: 1/4" BSP M)			
Code	Range	Resolution	Uncertainty *
STANDARD RANGES			
SP-1/1.5	-900 ÷ 1500 mbar	0.1 mbar	0.04 % (f.s.)
SP-1/8	-1 ÷ 7 bar	1 mbar	0.04 % (f.s.)
SP-1/22	-1 ÷ 21 bar	1 mbar	0.04 % (f.s.)
SP-1/50	0 ÷ 50 bar	10 mbar	0.05 % (f.s.)
SP-1/100	0 ÷ 100 bar	10 mbar	0.05 % (f.s.)
SP-1/200	0 ÷ 200 bar	10 mbar	0.1 % (f.s.)
SP-1/400	0 ÷ 400 bar	100 mbar	0.1 % (f.s.)
SP-1/700	0 ÷ 700 bar	100 mbar	0.1 % (f.s.)
ABSOLUTE PRESSURE RANGES			
SP-1/1.5A	0 ÷ 1500 mbar Abs.	0.1 mbar	0.04 % (f.s.)
SP-1/2.5A	0 ÷ 2500 mbar Abs.	0.1 mbar	0.04 % (f.s.)
SP-1/81A	0 ÷ 80 bar abs	10 mbar	0.05 % (f.s.)

other pressure ranges available on request

*includes Linearity, Repeatability, Hysteresis, Resolution, Uncertainty of the Master Reference (0,015% rdg).The uncertainty of the instrument is calculated for each sold unit in accordance with UNI CEI ENV 13005 rules. The level of confidence of the uncertainty is close to 95 %.
Temperature Effect: 0,002 % rdg/ °C (range: 0-50°C, reference temperature: 20 °C)

ELECTRICAL PARAMETERS				
SIMULATION	<i>Range</i>	<i>Resolution</i>	<i>Uncertainty</i>	<i>Input impedance. Load</i>
2 channels V c.c.	0 ÷ 10 V	1 mV	Up to 0.03 % rdg +0.003 % f.s.	4 mA
Trasmitter 2 wire (ext. power)	0 ÷ 25 mA	5 µA	Up to 0.03 % rdg +0.02 % f.s.	40 V (max. ext. P.S.)
2 channels mA c.c.	0 ÷ 25 mA	5 µA	Up to 0.03 % rdg +0.02 % f.s.	1 kΩ a 20 mA
MEASUREMENT	<i>Range</i>	<i>Resolution</i>	<i>Uncertainty</i>	<i>Input impedance. Load</i>
V c.c.	± 80 V	1 mV (up to ± 20 V) 5 mV (over ± 20 V)	Up to 0.03% rdg. ± 0.003 % f.s.	1 MΩ
mA c.c.	± 100 mA	1 µA (up to ± 20 mA) 5 µA (over ± 20 mA)	Up to 0.03% rdg. ± 0.003 % f.s.	10 Ω (Shunt res.)
Hz	0,5 ÷ 10 kHz	0.1 Hz	Up to 0.05% rdg.	1 Vpp min.

■ **Software functionalities on board**

Internal microprocessor enabling:

- Automatic Deviation (Error) calculation
- Signal conditioning: Linear, Square Root, Inverse
- All parameters displayed in selectable engineering units:
 - Pressure: bar, mbar, Pa, kPa, mmH₂O, inH₂O, mmHg, inHg, psi, kg/cm². (other units available on request)
 - Frequency: Hz
 - Current: mA
 - Voltage: mV, V
 - Percent (%) on all parameters
- Double Language: English/Second Language (selectable among Italian, French, Spanish, German)
- Display of the configuration data and measurement
- Logging function: up to 999 consecutive readings within a selectable time
- Up to 63 process Instruments (TAGS) for calibration run for a total of 1200 calibration points stored into non-volatile memory
- Built-in reporting facility via direct connection to any serial printer

- Each point-record (Process Instrument Calibration TAG) includes:

- Device (instrument) type
- Date
- Remarks
- Job Number
- Signal conditioning type
- Operator's code
- Maximum permissible error
- Tag Number
- Errors table (before/after calibration)
- Calibration cycle

■ **Option on Request: Newton Test Report Software**

It enables:

- The download of the calibration data to a PC through the RS 232 serial interface
- The configuration in A4 format of the calibration reports and/or certificates according to users standards (see below).

The Newton test report software supports any calibration procedure according to ISO 9001:2000 standards.

Operating platform: MS-Windows '98 or higher.

CALIBRATION LABORATORY via Ambrosoli 8 20090 Rodano Millepini - Milano-		CALIBRATION DOCUMENT Instr. tag no.: PL-101		MILANO - ITALY			
Instrument name:		pressure gauge					
Manufacturer:		WIKA					
Model:		A234					
Type:		110.10					
Serial number:		372264					
Measuring range:		0-5 bar					
Class:		1.0					
CALIBRATION REPORT SCANDURA NEWTON Calibrator S/N 162 Calibrator setup							
Reference reading		Reading from device		Auxiliary input/output			
Source	pressure (second range) 7 bar g (int. or ext. sensor)	pressure rdg. from keyboard type not defined		no reading type not defined			
Unit	bar	bar		not defined			
Range	0.000 / 5.000	0.0000 / 5.0000					
Test data							
Cal. point number	REF bar	REF % range	RDG bar	RDG % range	ERR % range	AUX	As found / as left
1	0.068	1.36	0.0000	0.00	*-1.36		As found
2	1.343	26.86	1.2500	25.00	*-1.86		As found
3	2.558	51.16	2.5000	50.00	*-1.16		As found
4	3.825	76.50	3.7500	75.00	*-1.50		As found
5	5.057	101.14	5.0000	100.00	*-1.14		As found
6	0.027	0.54	0.0000	0.00	-0.54		As left
7	1.264	25.28	1.2500	25.00	-0.28		As left
8	2.484	49.68	2.5000	50.00	0.32		As left
9	3.764	75.28	3.7500	75.00	-0.28		As left
10	5.006	100.12	5.0000	100.00	-0.12		As left

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CALIBRATION LABORATORY via Ambrosoli 8 20090 Rodano Millepini - Milano-		CALIBRATION DOCUMENT Instr. tag no.: PL-101		MILANO - ITALY	
Instrument output error					
Legend: As found ——— As left - - - - -					
Remarks:					
Instrument errors: allowable ±1.00%, max. -0.54%				NEWTON operator: RG Instrument passed calibration.	
Calibration Date: 21/10/96			Approval Date: 21/10/96		
Calibration done by: R. Grenata			Approval by: G. Lotti		

■ **STANDARD SUPPLY**

- NEWTON calibrator
- Electric kit (4 cables + 2 crocodiles)
- Conformity Certificate
- Work Calibration report
- Operating Manual

- ▶ Electric kit, code 241067 as per below table

Electric Kit
Product Code 241067
N.4 silivolt cables
N.2 crocodiles

■ **ORDER GUIDE**

NEW- XXXX- XXXXXX

Select one range,
code as per table 1

Select one or more ranges,
code as per table 2

Example: NEW-500G-SP1/50

- ▶ Pneumatic kit, code 241068 as per below table

Pneumatic Pressure Kit (up to 21 bar)
Product Code 241068
N.1 1/8" BSP M x Plug-in female connector
N.1 Plug-in male connector x tube O.D. 6 mm
N.1 "T" brass joint tube O.D. 6 mm
N.1 "Cross" joint tube O.D. 6 mm
mt.1.5 Neutral Rilsan tube hose 6x4
N.1 adapter tube O.D. 6 mm x 1/8 BSP F
N.1 adapter tube O.D. 6 mm x 1/4 BSP F
N.1 adapter tube O.D. 6 mm x 1/8 BSP M
N.1 adapter tube O.D. 6 mm x 1/4 BSP M

■ **ACCESSORIES ON REQUEST**

- ▶ NEWTON test report Software
- ▶ NEWTON/PC connecting cable
- ▶ NEWTON/serial printer connecting cable
- ▶ Official certificate (Italian SIT)
- ▶ Handheld Hydraulic Pressure Generator, model:
GHM: range 0 ÷ 300 bar
GHM-H: range 0 ÷ 400 bar
GHH: range: 0 ÷ 700 bar
Fluid: hydraulic oil

- ▶ Pneumatic kit, code 241069 as per below table

Pneumatic/hydraulic Pressure Kit (High pressure)
Product Code 241069
N.1 male connector 1/8" BSP x quick test
mt.1 high pressure tube with quick test
N.1 adapter quick test x 1/4" BSP
N.1 adapter NF4 1/4" BSP male X 1/4" NPT F
N.1 adapter NF2 1/4" BSP male X 1/2" NPT F
N.1 adapter BF2 1/4" BSP male X 1/2" BSP F
N.1 adapter NM4 1/4" BSP male X 1/4" NPT M
N.1 adapter NM2 1/4" BSP male X 1/2" NPT M

All the information and drawings contained in this datasheet are preliminary and subject to change at any time without any notice

SCANDURA: Synonymous with calibration

Scandura is a customer's oriented enterprise that stays aside all Instrument & Maintenance Engineers to better serve their requirements and making their job more accurate and valuable. Although nearly forty years of challenging and competitive activity all over the world have

definitively given **Scandura** an international role, the *roots* and the *fruits* remain "Made in Italy". A symbol of sophisticated solutions ensured by an experienced, creative, flexible and open minded team of people that is pleased to respond to customer's needs whatever your needs are.

Dott. Ing. SCANDURA & FEM S.r.l.

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Agent: